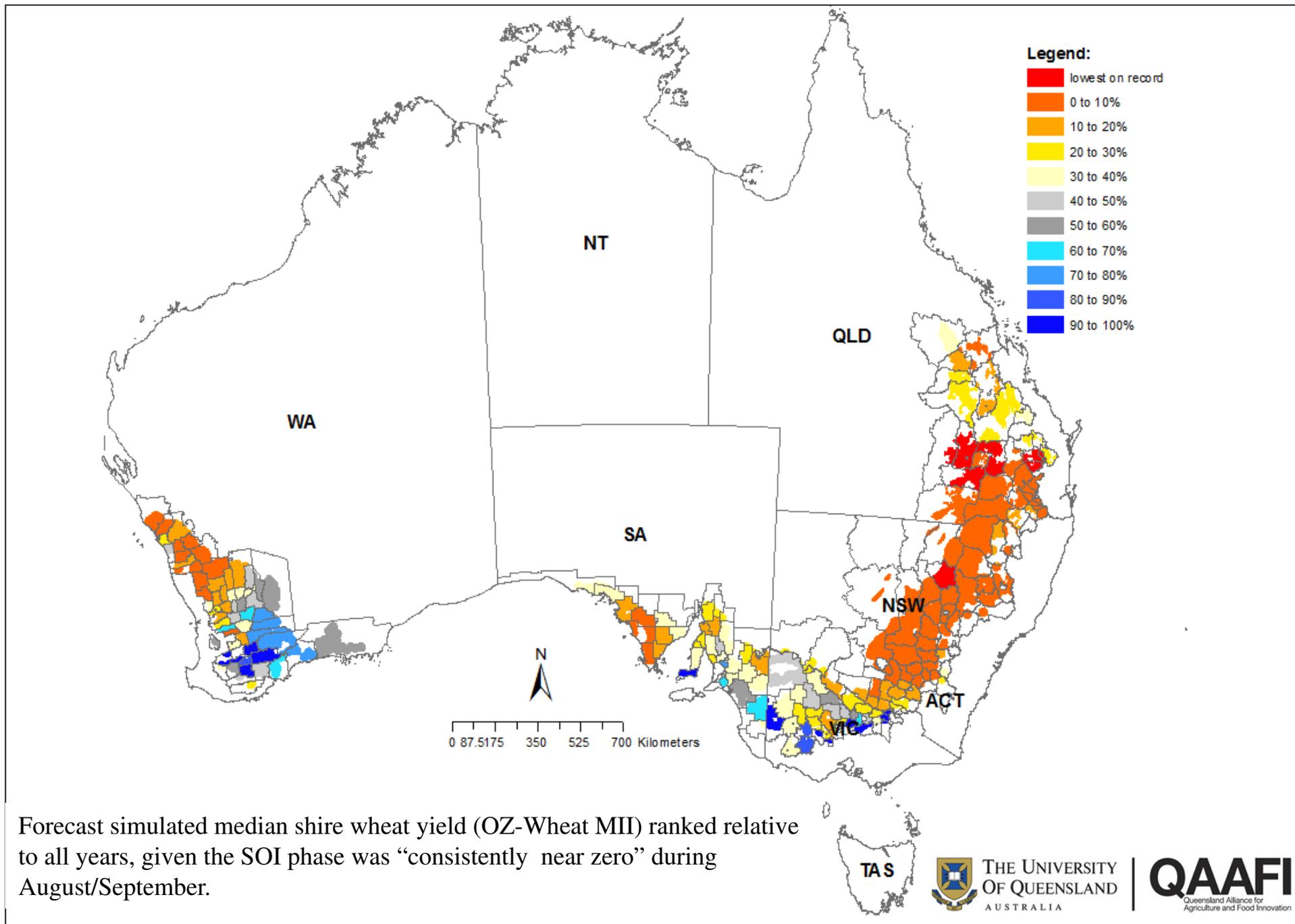
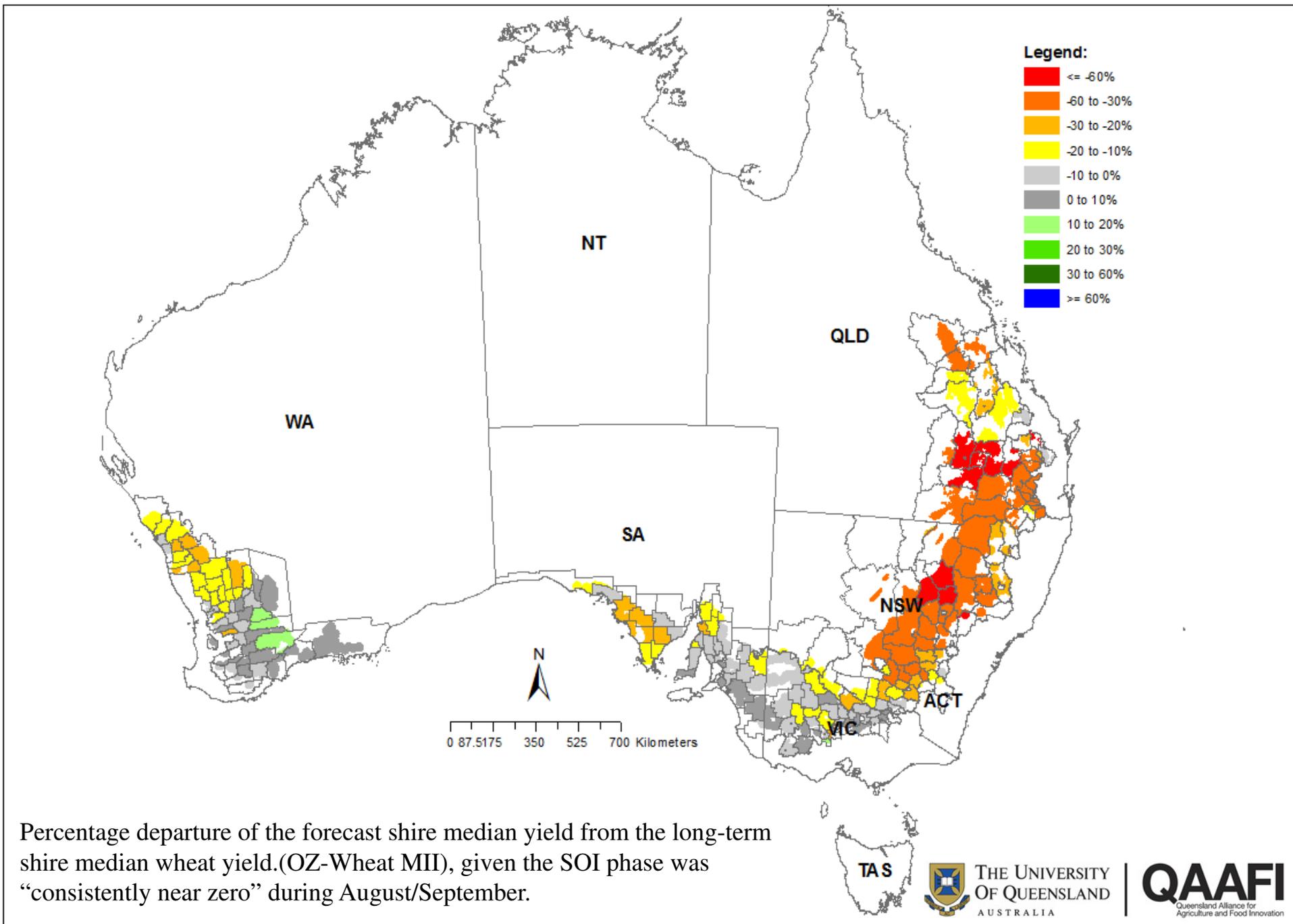


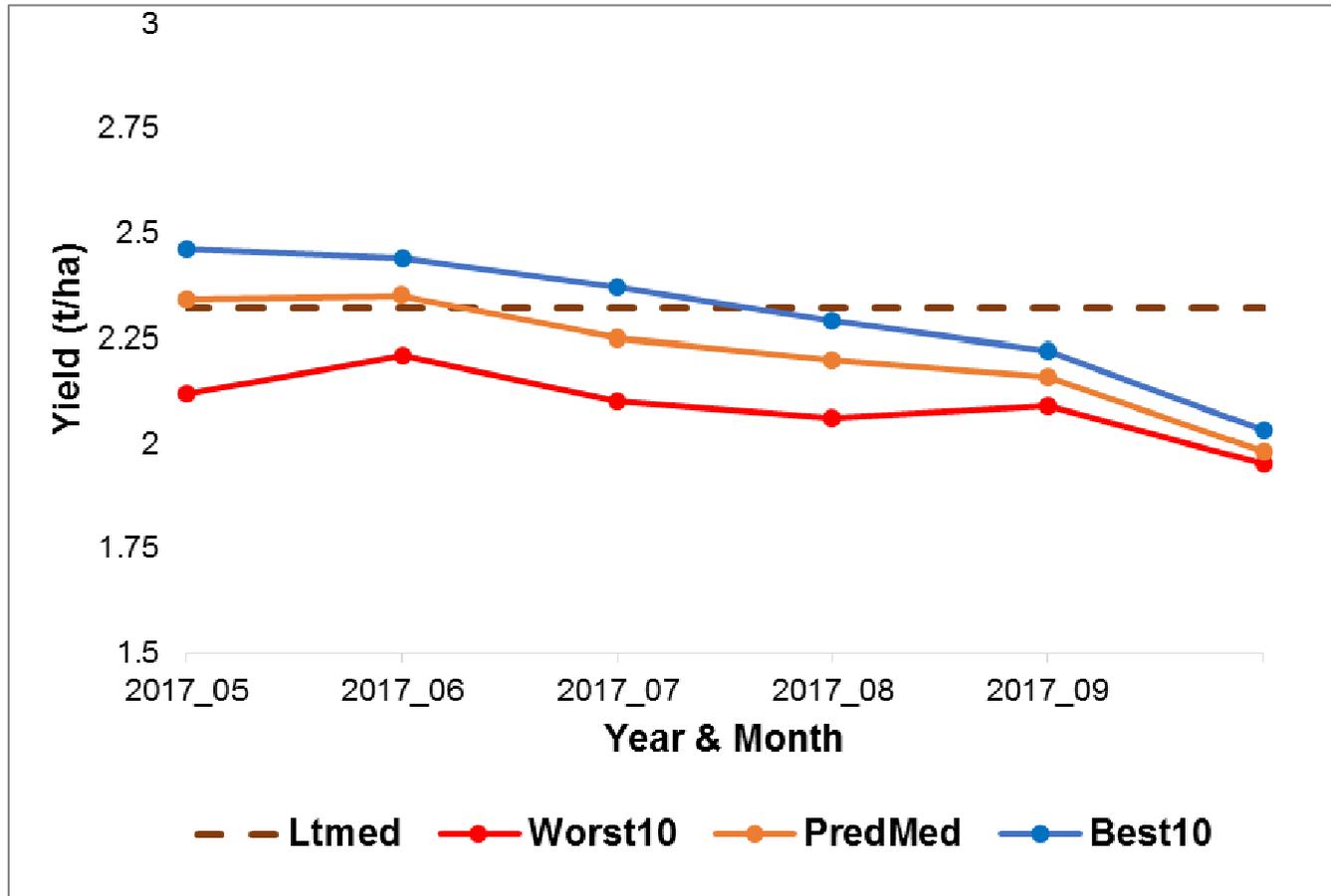
Simulated shire wheat yield long-term median (OZ-Wheat MII, from 1901-2015)



Forecast simulated median shire wheat yield (OZ-Wheat MII) ranked relative to all years, given the SOI phase was “consistently near zero” during August/September.



National Wheat Yield Trajectories



National wheat outlook as at 1st October 2017.

PredMed: Forecast Median

Ltmed: Long-term median yield;

Pred%: Predicted Percentile ranking of PredMed relative to last 115 years;

DFY%: Deviation Percentage of forecast median from long-term median.

Region	PredMed	Ltmed	Pred%	DFY%
AUS	1.98	2.32	8	-15
NSW	1.74	2.67	5	-35
QLD	0.95	1.65	3	-42
SA	2.18	2.4	24	-9
VIC	2.4	2.55	30	-6
WA	2.15	2.27	27	-5

OZ-Wheat MII: regional scale crop simulation model developed by UQ QAAFI.

Descriptive note:

The seasonal wheat outlook is based on the integration of (i) a simple agro-climatic wheat stress index model (Oz-Wheat MII) (i.e. Bare fallow routine - Ritchie, 1972; Wheat stress index model adapted from - Fitzpatrick and Nix, 1969; Nix and Fitzpatrick, 1969), which is sensitive to water deficit or excess during the growing season, (ii) actual climate data up to the forecasting date and (iii) projected climate data after that date. These projected data are drawn from historical analogue years based on similarity to the prevailing phase of the Southern Oscillation Index (SOI) (Stone et al., 1996). The Oz-Wheat model is run from 1 October the year before sowing in order to account for the influence of the summer fallow on starting soil moisture conditions. The model input parameters for each shire (i.e. potential available water content, planting rain & stress index period) have been selected based on the best fit when calibrated against actual shire wheat yields from the Australian Bureau of Statistics (ABS) for the period 1975 – 2000, 2005 & 2010 (MII). Cross validated spatial correlation when predicting the shire wheat yields for the 2000 season (MI) was 0.8 across all main wheat producing shires in Australia (Potgieter et. al., 2006, MI). For the updated MII 75% of the 237 shire have $R^2 > 0.60$.